

Case Study

Driving Value Through Nutrition Programs At McLaren Health Care

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Introduction

Malnutrition is a prevalent condition that is commonly unrecognized and undertreated in the hospital setting.¹ Defined as inadequate or unbalanced nutrition – including both undernutrition and overnutrition – malnutrition impacts large proportions of the general population.² Research shows anywhere from 30 – 50% of patients are malnourished upon admission to the hospital, while up to 26% of community-living adults are at-risk for malnutrition.^{1, 3} Furthermore, malnutrition is associated with worse clinical outcomes and increased cost.¹

As health systems optimize their population health management strategies, providers are looking for ways to decrease cost of care while increasing value to patients. With a focus on preventative care, more health systems are prioritizing dietary nutrition strategies in both the inpatient and ambulatory settings. By screening patients for dietary deficiencies, communicating dietary gaps, providing nutrition support, and offering dietary assistance post-discharge, health systems can decrease length of stay (LOS), hospital readmissions, and overall costs to realize substantial returns on their investments.^{4, 5}

McLaren Health Care

McLaren Health Care (McLaren) is a large, integrated delivery network headquartered in Grand Blanc, Michigan. With over \$3.97 billion in Total Operating Revenue in 2017, McLaren is comprised of 14 hospitals that conduct over 102,000 inpatient and 3.7 million outpatient visits annually.⁶ As part of its network, McLaren also operates a commercial health plan covering over 620,000 lives.⁶

Key Findings

- McLaren implemented a low-cost nutrition program to identify, treat, and manage malnourished patients in the inpatient setting with the intent of reducing readmissions and LOS.
- To more effectively provide comprehensive nutrition care, McLaren expanded the nutrition program to include patients transitioning to outpatient settings, starting with the system's Comprehensive Primary Care Plus (CPC+) clinics.
- While data collection is still in progress, McLaren anticipates reductions in hospitalizations and resource utilization as well as increases in provider and patient experience attributed to the nutrition program.

Implementing a Nutrition Program

As part of McLaren's deeply rooted commitment to "Doing What's Best" for patient excellence, the health system has implemented strategies to improve the value of care provided to their communities.⁷ A key aspect of McLaren's strategy includes the development and implementation of a comprehensive nutrition program across its inpatient and outpatient settings. The nutrition program is designed to facilitate the identification, assessment, and treatment of malnourished patients to improve clinical and economic outcomes. Recognizing the impact of malnutrition on patient outcomes as well as the impact on health services costs and utilization, McLaren's senior leadership team was supportive of establishing a nutrition program as a key facet of the organization's population health strategy.

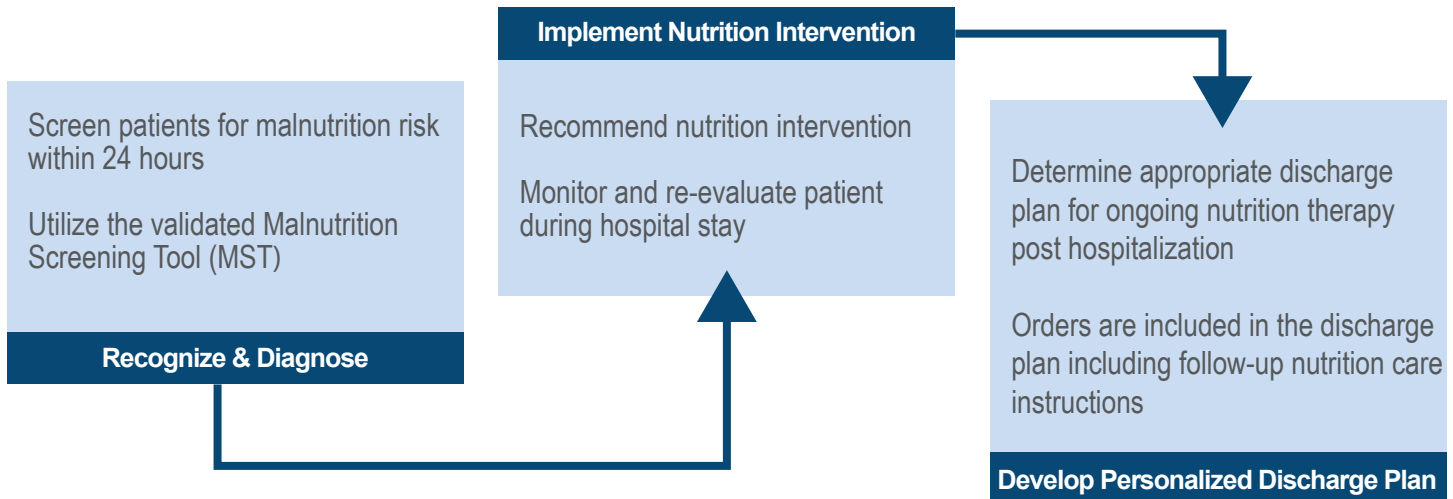
Our view is that nutrition is a way to improve outcomes in terms of value-based care. It's a low-cost, low-tech, and high-impact intervention that's been clearly shown to have significant benefits."

– Dr. Michael McKenna, CMO
McLaren Health Care

Beginning in the Inpatient Setting

McLaren initially implemented a nutrition program in the inpatient setting in the early 2000s but only formalized and expanded the program in recent years. The program involves three key steps: (1) identify patients who are malnourished or at risk for malnutrition; (2) implement a nutrition intervention; and (3) develop a discharge plan (Figure 1).

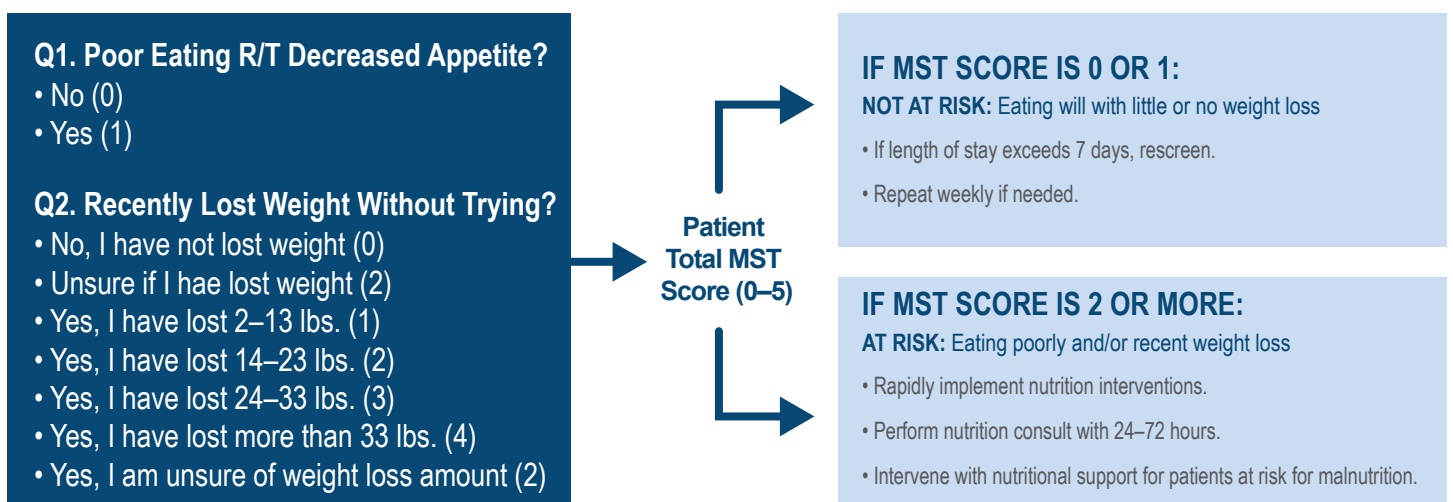
Figure 1. McLaren's Inpatient Nutrition Program



Supported by established published literature and championed by Dr. Michael McKenna, Chief Medical Officer of McLaren Health System, the decision to implement a nutrition program involved multiple stakeholders and functional areas across the health system. Representation included stakeholders from Quality, Nursing, Population Health, and Accountable Care Organization (ACO) leadership. Senior leadership established a steering committee with the relevant stakeholders to oversee and govern the program. McLaren elected to partner with Abbott for the program based on the organizations' previous longstanding relationship and Abbott's work implementing similar programs at other comparable institutions.

A core component of McLaren's nutrition program recognizes the prevalence of malnutrition and identifying patients who are malnourished, or are at risk of malnutrition, as individuals are admitted to the hospital. To facilitate this process, McLaren implemented an externally published and validated Malnutrition Screening Tool (MST) and integrated nutrition screening into the nursing workflow as part of the inpatient admission process (Figure 2).⁸ The MST establishes appetite and recent unintentional weight loss, parameters which are indicative of a patient's risk of malnutrition. Prior evidence established the reliability of the MST to be 93% - 97% in identifying patients at risk for malnutrition making this tool highly valuable for assessing McLaren's patient population.⁸

Figure 2. Malnutrition Screening Tool (MST)



The MST is integrated into McLaren's EHR and documents the patient's score in their medical record. Patients receive a score from 0 – 5 reflective of their risk of malnutrition. Patients with a score of 2 or higher are deemed 'At Risk' which prompts an order to be sent to the hospital's dietary department for a consult. From there, patients are administered the appropriate nutrition interventions based on their individual condition, dietary needs, and physician recommendations.

The nutrition intervention is determined based on an established Oral Nutrition Supplement (ONS) protocol and initiated within 24 hours of the patient's MST screening. Included in the ONS protocol is a detailed nutrition assessment and diagnosis, recommendation for ONS intervention based on the diet ordered by the physician, and detailed plans for continued nutrition monitoring and evaluation. ONS interventions involve low-cost nutritional drinks all of which are gluten and lactose-free. Additionally, nutritional drinks are selected based on the patient's condition and nutrition status. For example, patients on a clear liquid diet may be prescribed Ensure Clear nutritional drinks, while patients on a consistent carbohydrate diet may be prescribed Glucerna Shake nutritional drinks.⁹

We had underestimated the number of patients who needed nutritional support. This program is unique and identifies patients that may not have been recognized as malnourished in the inpatient setting. If you can provide balanced nutrition to these patients, you can change outcomes."

**– Chandan Gupte, Vice President, Clinical Excellence & Research
McLaren Health Care**

Lastly, patients deemed at risk for malnutrition are given a discharge plan for ongoing nutrition therapy post-hospitalization that includes a prescription and coupons for oral nutritional drinks. McLaren and Abbott then jointly track the coupon redemption, which gives both organizations visibility into patient adherence with the regimen. Instructions are written in the patient's discharge plan for follow-up with the outpatient provider.

Expanding to the Outpatient Setting

Recognizing that a patient's nutrition needs extend beyond the inpatient stay, McLaren elected to expand the program into the outpatient setting to provide a comprehensive nutrition solution beginning in the Fall of 2018. The decision to expand the program was made by a multidisciplinary group of leaders at McLaren, with involvement from quality and population health functions.

Continuing their partnership with Abbott, the outpatient pilot focuses on continuing nutrition interventions for patients transitioning from the inpatient setting. To facilitate this transition, six centrally-located transitional care coordinators have responsibility for contacting patients within 48 hours of discharge to review medications and discharge instructions. Care coordinators also schedule follow up appointments with the patient's physician office. Additionally, McLaren has identified an initial focus on high-risk populations including patients with diabetes and chronic obstructive pulmonary disease (COPD). To facilitate this focus, the health system has healthcare navigators on site at the pilot clinics to identify patients for chronic care management support. With the continuation of the inpatient nutrition program and an emphasis on supporting patients with chronic conditions, McLaren's outpatient pilot is designed to facilitate a comprehensive and lasting intervention for these at-risk patient populations.

The structure of the outpatient pilot is similar in that patients receive a risk assessment for poor nutrition and are started on an ONS intervention if they are deemed at-risk during the initial assessment. McLaren elected to pilot the outpatient program in the health system's CPC+ clinics, due to the additional care coordination and case management resources already embedded in the clinics that help support the nutrition program. Implementing the program in the CPC+ clinics also allowed McLaren to fund the initiative through the health system's ACO.

There is a gap when nutritional support is only provided for a couple of days during an inpatient stay—what happens when the patient is recovering? Without nutritional support coupled with medical treatment the patient may end up as a readmission or with complications. You have to continue the support through their recovery."

**– Chandan Gupte, Vice President, Clinical Excellence & Research
McLaren Health Care**

To implement the pilot program, leaders at McLaren integrated the risk assessments and follow up into the workflow for care coordinators and healthcare navigators. While physicians emphasize the importance of nutrition and compliance with the ONS with patients, the execution of the nutrition program primarily falls upon nursing and care coordinators. Leveraging clinicians beyond physicians for the screenings allowed McLaren to implement the program more rapidly and prevented risk of physician burnout. With the team-based approach, providers do not feel overburdened or experience significant disruption of their workflow, which has resulted in positive clinician receptivity to the program.

Prioritizing Nutrition Education

As the prevalence of malnutrition is often underestimated, education was key to successful implementation of the nutrition program in both the inpatient and outpatient settings. To facilitate this education, McLaren utilizes Abbott's expertise to develop and deliver educational curricula to clinicians that emphasize the impact and importance of nutrition on a patient's overall health. Educational programs are targeted by clinician audience (e.g., physicians, nurses) based on their role and responsibilities.

Beyond clinician education, crucial to McLaren's success is the prioritization of strong patient and family educational programs. While McLaren utilizes Abbott for clinician education, patient and family education is primarily conducted by McLaren clinicians, although they often use externally developed materials. Additionally, McLaren partnered with Abbott to leverage supplementary patient resources, including a hotline patients can utilize for questions regarding their specific nutrition intervention or general nutrition counsel.

The key to success is convincing physicians that this program is important. Patients will listen to care managers and nurses, but you really need the physician to reinforce the importance of nutrition."

**– Dr. Michael Ziccardi, CMO
McLaren Physician Partners**

Evaluating Success & Further Expansion Across the Health System

As McLaren is in early stages of expanding the nutrition program to the outpatient setting, metrics of success are still being defined and measured. While outcomes and return on investment (ROI) are still being determined for the nutrition program, a key component of the decision to move forward with the expanded nutrition program was an in-depth budget impact analysis which gave insight into the potential cost savings for the health system.

The budget impact model (BIM) utilizes a combination of health system and national averages to calculate the financial impact of a nutrition program on an organization (Figure 3).¹ To identify the scope of the nutrition program, the BIM leverages historic volume data from the health system as well as the prevalence of malnutrition in the population(s) of interest to calculate the number of patients that would be targeted. The BIM then incorporates program cost estimations based on the estimated population needs, including fixed implementation expenses needed to develop the program as well as the ongoing expense of providing nutritional support to the identified population. Leveraging algorithms developed from studies of previous nutrition program implementations, the BIM calculates the projected reduction in the number of readmissions and LOS for the target population. Utilizing expense data, health systems can calculate the cost savings achieved due to reduced readmissions and LOS. Subtracting the program implementation cost from overall savings provides a compelling estimation of the overall budget impact of the nutrition program for the health system.

Figure 3. Nutrition Program Budget Impact Model



Informed by the results of previous nutrition programs and the BIM, leaders at McLaren expect to see a reduction in hospitalizations and healthcare resource use for patients participating in the nutrition program, resulting in an overall reduction in total cost of care. Studies have shown that malnourished patients have higher rates of readmissions, and worse outcomes than those that are well-nourished.¹ Therefore, addressing the core problem of malnutrition will allow McLaren to realize downstream effects. McLaren will utilize EHR data to track utilization for participating patients and compare to the health system's baseline to determine the cost savings for the health system and calculate a formal ROI. Additionally, with the program's focus on holistically treating a patient across the care continuum, leaders expect the program to facilitate an increase in patient experience. Leveraging the communication channels and engagement established through the nutrition program, McLaren hopes to see increased patient experience and adherence across other initiatives at the health system as well. This increased engagement is a key outcome for leaders at McLaren, who view the nutrition program as an important part of the organization's broader population health management strategy.

As McLaren continues to implement the nutrition program in the outpatient setting, leaders are evaluating next steps for expanding the program across the health system more broadly. Stakeholders are working to develop and streamline the processes within the current subset of CPC+ clinics before expanding to additional clinics or other outpatient settings. Leaders are keen to ensure a standard workflow has been developed at the current clinics before scaling the nutrition program to additional clinics.

One of the primary challenges to expanding the outpatient program will be evaluating the additional resources needed to implement the program in a non-CPC+ clinic that does not already have care coordinators embedded. Additionally, McLaren is in the process of migrating the health system to a single EHR from multiple ambulatory EHR systems. As the nutrition screening tool and program leverage EHR integration, the EHR transition has been a challenge to expanding the program more broadly. Leaders implementing the nutrition program are expecting to standardize care processes in the current clinics and expand across the broader network likely after the EHR deployment. Stakeholders hope to evaluate expansion of the nutrition program to additional clinics in late 2019.

Nevertheless, leaders at McLaren are optimistic about the impact of the expanded nutrition program on the community and are aiming to target as much of the patient population as possible. Beyond expanding the locations of the program, leaders at McLaren are also evaluating when to expand the patient population. Currently the outpatient pilot focuses on patients transitioning between the inpatient and outpatient settings and those with chronic conditions. Ultimately, McLaren envisions the program will include the broader outpatient population regardless of inpatient admission. This will allow the health system to target a greater proportion of patients to establish a greater footprint on the health of the community.

Informed Practices Established at McLaren Health Care

- 1** To improve overall patient outcomes and reduce health services resource use and costs, health systems should establish a coordinated nutrition program that facilitates the transition from the inpatient to the outpatient setting.
- 2** To ensure prioritization of the nutrition program among clinicians, early buy-in and support from senior leadership are critical.
- 3** Nutrition programs should leverage a team-based intervention in which the roles of physicians, nurses, and care coordinators are clearly defined and communicated.
- 4** Health systems should develop robust educational programs customized by stakeholder - provider, patient, and caregivers/family - to ensure prioritization and adherence to the recommended nutrition regimen.

References

1. Sriram K, Sulo S, VanDerBosch G, Partridge J, Feldstein J, Hegazi RA, Summerfelt WT. A Comprehensive Nutrition-Focused Quality Improvement Program Reduces 30-day Readmissions and Length of Stay in Hospitalized Patients. *Journal of Parenteral and Enteral Nutrition*.
2. Akner G, Larsson J. *Respir Med*. 2016;117:81-91.
3. Sheean P, Farrar IC, Sulo S, Partridge J, Schiffer L, Fitzgibbon M. Nutrition risk among an ethnically diverse sample of community-dwelling older adults. *Public Health Nutrition*: 22(5), 894-902.
4. Nutrition Care Recommendations. Alliance to Advance Patient Nutrition. Website. Accessed April 2019. http://static.abbottnutrition.com/cms-prod/malnutrition.com/img/Alliance_Roles_Admin_2014_v1.pdf
5. Tappenden KA, Quatrara B, Parkhurst ML, Malone AM, Fanjiang G, Ziegler TR. Critical Role of Nutrition in Improving Quality of Care: An Interdisciplinary Call to Action to Address Adult Hospital Malnutrition. *J Acad Nutr Diet*. 2013;113:1219-1237.
6. About McLaren Health Care. McLaren Health Care. Website. Accessed April 2019. <https://www.mclaren.org/main/mclaren.aspx>
7. Doing What's Best. McLaren Health Care. Website. Accessed April 2019. <https://www.mclaren.org/main/mclaren-doing-whats-best.aspx>
8. Ferguson M, Capra S, Bauer J, Banks M. Development of a valid and reliable malnutrition screening tool for adult acute hospital patients. *Nutrition*. 1999;15(6):458-64.
9. Oral Nutrition Supplement (ONS) Policy Training Guide. McLaren Health Care. PowerPoint Presentation.

Methodology

In March and April of 2019, The Academy conducted in-depth telephone interviews with three executives at McLaren Health Care and one executive at Abbott around the health system's current nutritional programs and outcomes seen thus far. The Academy thanks the following individuals for their participation in this project:

- **Michael McKenna, MD**, Executive Vice President, Chief Medical Officer, McLaren Health Care
- **Chandan Gupte, MSc, MA, MBA, RD, CCRP**, Vice President, Clinical Excellence & Research, McLaren Health Care
- **Michael Ziccardi, DO**, Chief Medical Officer, McLaren Physician Partners
- **Suela Sulo, PhD**, Senior Manager, Global Health Economics and Outcomes Research, Abbott

None of the participants listed above derived any personal profit or gain through participation in this case study.

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